



PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

DESCRIPTIONS OF SOME UNDESCRIBED FORMS OF
CINARA (APHIDAE)

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As a result of Aphid collecting in 1955 it is possible to add the following descriptions to the known Aphid forms. Two of the forms described were taken by Dr. L. G. Gentner and it is a pleasure to acknowledge his generous help.

Cinara anzai H&E.

Alate male.

Color not observed in life. Single specimen cleared. Head and antennae black. Thorax black. Abdomen with cornicles dark dusky, dorsum with several rows of brownish pigmented spots, some of these appear to surround wax glands. Femora in life most likely black, slightly lighter near base. Tibiae and tarsi uniform black. Length from vertex to end of anal plate 3.37mm.

Antennal segments with the following lengths as follows: III .64mm., IV .25mm., V .31mm., VI .13 + .04mm. Distribution of sensoria as follows: III 82-92, on this segment the sensoria vary slightly in size, all are tuberculate, and cover nearly all of the surface. Hair on the third antennal segment few, very scarce on posterior margin, longest longer than width of segment but less than twice width of segment, all upstanding. Primary sensorium on third antennal segment difficult to differentiate from secondary and may not be present, but mistaken for such. Fourth antennal segment with thirteen secondary sensoria, primary sensorium probably not present, the secondary sensoria on this are lacking on the anterior surface. The fifth segment has seven secondary sensoria, arranged in an irregular row on the posterior margin, the primary sensorium on this segment is large and has a wide rim. Marginal sensoria on the sixth segment few, close to the primary and difficult to differentiate. Width of head through the eyes .75mm. Median transverse suture black, well developed Lateral ocelli large clear, outstanding because of the dark color of head. Rostrum extending just beyond metathoracic coxae. Ocular tubercles well developed. Second fork of media closer to margin of wing than to first fork. Hind tibiae 2.14mm. in length, hair on tibiae numerous, longer and more numerous on outer margin than on inner, the longest hair about twice width of tibiae. Hair on ventral surface at apex of tibiae short and numerous, the dorsal surface of the tibiae in this region is free from hair. Hair on ventral surface of second tarsal segment very sparse, much shorter than those on the

dorsal surface. Cornicles shallow, outer rim about .375 mm. opening of cornicles acentric.

Allotype alate male. Taken on *Pinus albicaulis* Crater Lake, Oregon, Sept. 2, 1955. Collected by L. G. Gentner. This type has been deposited in the United States National Museum.

Apterous viviparous female.

Dr. Louis G. Gentner who collected the material from which this form is described, describes the color of living specimens as follows "General body color yellowish-brown, varying in darkness in different individuals, disk of dorsum of abdomen with interrupted transverse white powdery lines, producing a whitish and brownish mottled appearance. Cornicles dark, surrounded by a pale area. Appendages light brownish-yellow with distal portion of femora, tibiae and tarsi dark."

Length from vertex to end of anal plate varying from 3.52-3.87mm. Antennal segments with the following lengths: III .60-.63mm., IV .24-.315mm., V .30mm., VI .14 + .045mm. Sensoria distributed as follows: three, with primary only, four, zero to one secondary, plus primary, five, one to two secondary, plus primary. Marginal sensoria small, few in number, not more than four as few as three, arranged in a row very close to the primary, difficult to differentiate in most cases. Extended rostrum reaching to mid region of metathoracic coxae, or with segments three four and five beyond. Metathoracic tibiae varying from 2.62-3.00mm. Hair on tibiae abundant, set at an angle of about forty-five degrees, in length slightly less than width of tibiae, or subequal to width. Hair on tibiae occasionally dull at the tip but not as much as in the case of *C. curvipes* (P). First segment of hind tarsis with about fifteen hairs on the ventral surface. Second segment of hind tarsis with hairs on ventral surface more numerous, finer, and shorter than those on the dorsal surface. First metatarsal segment .11-.13mm., second tarsal segment .27-.33mm. Cornicles varying from .60-.65mm. across outer margin, rather oval in outline with margin rather irregular, but never deeply indented. Mid dorsal region of abdomen posterior to cornicles with about four rather large irregular shaped pigmented spots, these spots may vary in position and size. The two pigmented spots anterior to the cauda with two rows of hairs. Abdomen with numerous long fine hairs. Cauda with basal region pale, hairs on cauda confined largely to margins, the hair on the mid dorsal region few and short. Genital plate crescent shaped with few long hairs confined largely to the ends.

Morphotype apterous viviparous female deposited in the United States National Museum. Taken on branches of *Pinus albicaulis* by beating branches by L. G. Gentner, at Crater Lake, Oregon, Sept. 2, 1955.

Oviparous female.

The color of this form was observed by Dr. L. G. Gentner as similar to that of the viviparous female, except that the tip of the abdomen beyond the cornicles and the under side is solid white due to powdery deposit. Hind tibiae only slightly swollen, sensoria on tibiae numerous, tuberculate, not located on apical fourth of segment, or on the dark portion of the tibiae near the base. Morphotype apterous oviparous female, deposited in the United States National Museum. Data same as for viviparous female.

Cinara wahtolea H.*Alate male.*

Size and general color.—Length from vertex to end of anal plate varying from 2.55-2.85mm. Head, thorax and abdomen, except for cornicles which are black, highly pulverulent, almost mealy. Antennae except for the extreme base of third segment black. Pro and mesothoracic femora black, metathoracic femora with basal half pale, remainder black. All tibiae black, with portion proximal half somewhat lighter in color.

Ocular tubercles extremely small, extended rostrum reaching just beyond cornicles. Antennal segments with the following lengths: III .555-.60mm., IV .25mm., V .27-.33mm., VI .11-.12 + .04mm. Sensoria distributed as follows: III 58-72, most specimens with about 70, IV 13-18 each number represented by one case, most common numbers 14 and 15, VI none. On the third segment the sensoria are extremely tuberculate, cover all sides of the segment and vary much in size, the primary sensorium if present on this segment is like the secondary. The hair on the third segment is sparse, and is set at an angle of about sixty degrees. The sensoria on the fourth segment are irregularly arranged over most of the surface, they vary little in size, the primary sensorium is present, is large and has a wide rim. The sensoria on the fifth segment are confined largely to one side of the segment but are not arranged in a row, the primary sensorium is large and has a wide rim. All segments of the antennae are smooth except for the ends of the fifth and sixth segments which are lightly imbricated. The median posterior lobe of the thorax with few hairs, which are confined to the apical half of lobe. Second fork of media closer to margin of wing than to the first. Hind tibiae varying from 1.96-2.10mm. in length. Hind tarsal segments with the following lengths: .105mm. for the first segment and .225-.25mm. for the second. Hair on hind tibiae fine, not numerous, the longest three times width of tibiae, the shortest longer than width, but less than two times width of tibiae. Hairs on ventral surface of first tarsal segment confined to the apical three fourths of segment. Cornicles shallow with irregular outer rim. Hair on cornicles abundant, irregularly arranged, width of cornicles varying from .25-.30mm. Genital plate long and narrow, hair on genital plate uniformly arranged. Gonapophyses black, provided with medium short hairs.

Allotype alate male, deposited in the United States National Museum. Reared on branch of *Pinus edulis*, Grand Junction, Colorado. Taken Oct. 22, 1955.

Males of this species are extremely active after becoming adult, to obtain them, it was necessary to transfer immature specimens to small branches and cage securely.

Cinara nitidula H.*Apterous male.*

Size and General color.—Length from vertex to end of anal plate varying from 1.30-2.07mm. Free from all powder, shining, as if highly polished, dark tan to brown.

Antennal segments with the following lengths: III .36mm., IV .135-.15mm., V .15-.20mm., VI .09-.10 + .05mm. Sensoria distributed as follows: III 20-29 most abundant on apical half of segment, for the most

part very small, all tuberculate, irregularly arranged. The sensoria should not be confused with the raised clear areas from which the antennal hairs arise. The primary sensorium on the third segment if present is like the secondary. The sensoria on the fourth segment are confined largely to one side of the segment, they vary in size, with at least one rather large, the primary sensorium is present but small. The fifth segment has from four to six secondary sensoria, these are confined largely to one side of the segment, but they are not arranged in a row, the primary sensorium on this segment is large and has a wide rim. The ocular tubercles are large. The extended rostrum may reach almost to the end of the abdomen. The tibiae of the metathoracic legs are 1.35mm. in length. The cornicles vary from .40-.52mm. across their outer margins. The genital plate is long and narrow, it is indented in the center of its anterior margin. Gonapophyses black, small, rather blunt.

Oviparous female.

Similar in all respects, except for the hind tibiae to the apterous viviparous female, and like it shining and free from powder on the dorsum. Hind tibiae varying from 1.65-1.85mm. provided with numerous sensoria. The sensoria are hardly typical, few are tuberculate, most are difficult to differentiate, they extend the full length of the tibiae which are very little swollen. The color of this form may vary from dark tan through dark brown to almost black, the black forms appearing last.

Stemmoters of this species taken May 28, 1955 in the type locality were at first not associated with specimens of *C. nitidula*, they were black, highly polished, with the dorsum of the abdomen reticulated.

Allotype apterous male, reared on branch of *Pinus edulis*, Grand Junction, Colo. Oct. 10, 1955, deposited in the United States National Museum. Specimens of this form because of their small size are difficult to collect. Morphotype apterous oviparous female reared on branch of *Pinus edulis* Grand Junction, Colorado, Oct. 22, 1955. The type of this form has been deposited in the United States National Museum. Apparently alate viviparous females of this species are produced at random throughout the season. *Pinus edulis* is widely distributed in western Colorado, however this species of *Cinara* appears to have an extremely limited range, I have only taken it on four trees all within a small area. Given a branch of its "type tree" or one similar to it, it is very easy to rear, transferred to a branch from a dissimilar tree of the same species it dies. As near as I can determine a tree in order to be a host for this species, must have the terminal branches a deep-yellow, with large yellowish scales at the base of the needles. Trees with the bark of the terminal branches gray or greenish, no matter how vigorous are not suitable for this species. Other species of *Cinara* which have *Pinus edulis* for their host appear to be just as specific in their needs. I suspect that these requirements are in some way associated with the ecological and nutritional needs of the individual species, which the Aphid worker of the future will work out. At present it may suffice, to be aware of the fact that species feeding on *edulis* have definite preferences, and that it is not enough just to look on this host for a given species, but that one must look for trees which meet the requirements of the species looked for.